



Figure 3-47.—Cross-legged position.



Figure 3-48.—Cross-ankled position.

unnatural, straining grasp will cause excessive muscular tension in the hand, resulting in a tremor, that will also be transmitted to the weapon.

The index finger should make contact with the trigger at the place that will best produce a movement straight to the rear. This is usually between the first joint and the tip. The trigger (index) finger must not touch the receiver or rifle.

Once the sights are lined up, apply pressure on the trigger and gradually increase it until the hammer releases and the shot fires. If at any time during this process the sights drift off the target, interrupt the trigger squeeze, but maintain the pressure. When the sight picture is again correct, continue the squeeze until you fire the shot.

When you fire from the standing position, coordination of trigger squeeze and proper aim is critical. The shooter must start and continue his or her

squeeze only when the front sight is momentarily at rest or is slowly moving in the smallest area of the bull's-eye. An inexperienced shooter usually tends to "snap shoot" in this position; that is, he or she attempts to complete the trigger action instantly as the front sight moves across the aiming point. This invariably results in jerking the rifle and producing a wild shot.

Squeezing the trigger correctly is not as easy as it may appear; the technique must be fully mastered. To assist you in remembering the correct technique, the acronym, BRASS, was developed.

B—BREATH. Proper breathing is essential. It will help you relax, steady your aim, and clear your vision. First, take a normal breath; then release part of it (enough to be comfortable); and hold the remainder. Do not hold your breath for more than 10 seconds before shooting. This may tense your muscles and blur your vision. If you do not shoot during this breathing period, take another normal breath and repeat the procedure.

R—RELAX. You must relax. The more relaxed you are the better your shot will be.

A—AIM. Concentrate on the proper sight alignment of the correct sight picture. Focus your eye on the front sight post (blade).

S—SLACK. Some rifles have a certain amount of slack in the trigger. Take up this slack before starting your squeeze to the rear to fire. The M16 trigger slack is insignificant, and this step is generally omitted when firing that weapon. Knowing your weapon is important here.

S—SQUEEZE. Squeeze the trigger as previously described. If you squeeze it properly, you will not know when the round will fire. This will prevent flinching, caused by anticipation of the shock, or recoil, from the exploding cartridge.

Calling Your Shot

One of the best ways of developing good shooting habits is to learn to call your shot. To do this, you must notice exactly where you aim the sights at the instant you fire the shot and call out immediately where you think the bullet will hit. This takes a lot of concentration. Any shooter who cannot call his or her shot correctly is either blinking or flinching. Shots are called by the "clock method." An example would be "bull's-eye at 4 o'clock"; that is, the shot hit the lower right portion of the bull's-eye.

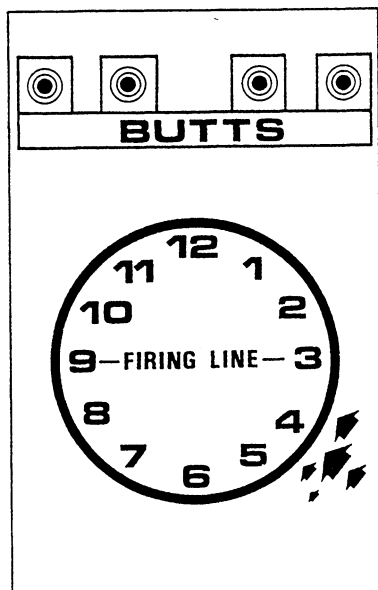


Figure 3-49.—4 o'clock wind.




FLAG STRAIGHT OUT WIND FORCE MEDIUM TO HEAVY 15 TO 25 MPH		WINDAGE EFFECT 200 YARDS 2 TO 3 CLICKS 300 YARDS 3 TO 5 CLICKS
FLAG 30° TO 45° OUT WIND FORCE LIGHT TO MEDIUM 7 TO 11 MPH		WINDAGE EFFECT 200 YARDS 0 TO 2 CLICKS 300 YARDS 2 TO 3 CLICKS
FLAG 8° TO 10° OUT WIND FORCE NONE TO LIGHT 2 TO 5 MPH		WINDAGE EFFECT 200 YARDS 0 CLICKS 300 YARDS 0 TO 1 CLICK

Figure 3-50.—Range flag wind reading.

Wind and Wind Effect

One of the most important influences on rifle shooting is wind. Wind affects shooting in two principal ways: it literally blows the bullet off course; and it buffets the shooter, making proper aiming difficult.

The effect of the bullet in flight progressively increases as range increases. A wind that will have little or no effect on a bullet at 200 yards will have some effect on one at 300 yards. The effect of the wind on the bullet in flight is compensated for by applying proper windage to the sights.

The effect of the wind on the body of the shooter depends on the relative stability of the various shooting

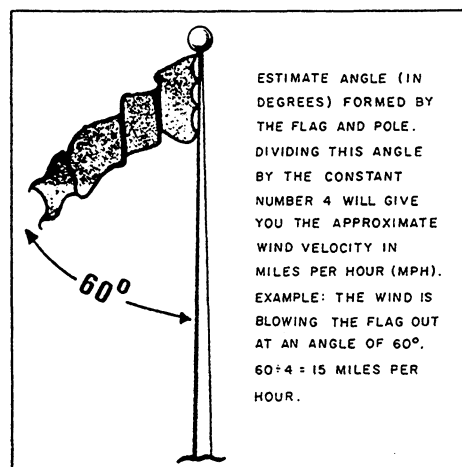


Figure 3-51.—Estimating wind velocity.

positions. Wind that has no effect on the prone shooter might have some effect on the sitting shooter, a greater effect on the kneeling shooter, and a definite adverse effect on the standing shooter. The effect of the wind on your body can be decreased through the development of the best possible shooting positions.

Wind Direction and Force

The direction of wind is explained by reference to the face of a clock. The firing line is thought of as the center of a big clockface with 12 o'clock toward the target butts and 6 o'clock to the rear. Wind blowing from the right rear is a 4 o'clock wind (fig. 3-49).

Wind Reading Aids

Wind direction and force can be quickly determined by observing the range flags. Figures 3-50 and 3-51 give examples using the range flag. If no flag is visible, use the following observations as a guide in determining wind velocities:

1. Smoke drifts slightly—less than 2 mph wind
2. Wind can be felt lightly—3 to 5 mph wind
3. Tree leaves move constantly—5 to 8 mph wind
4. Wind raises dust and loose paper—8 to 12 mph wind
5. Small trees sway—12 to 15 mph wind

FIRING TECHNIQUES—PISTOL

Good pistol shooting, like rifle shooting, depends upon your ability to master and apply certain basic marksmanship principles. You must practice these principles—aiming, position, and trigger squeeze—often.

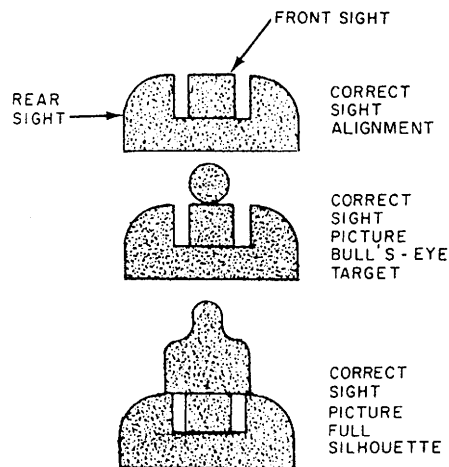


Figure 3-52.—Correct sight alignment and sight picture.

Apply these fundamentals of marksmanship! If your life ever depends on how well and accurately you shoot the pistol, you can be the one who walks away alive.

Aiming the Pistol

Aiming the pistol consists of combining proper sight alignment with the correct aiming point to obtain a correct sight picture.

SIGHT ALIGNMENT.— Sight alignment is best defined as placing the front and rear sights into correct alignment with the eye. For a correct sight alignment, you must center the front sight in the rear sight, bringing the top of the front sight exactly level with the top of the rear sight (fig. 3-52). Correct sight alignment is essential for accuracy. It is particularly important with the pistol because of the short sight radius (about 6 1/2 inches). For example, if a 1/10-inch error is made in aligning the front sight in the rear sight, the bullet will miss the point of aim by almost 15 inches at 25 yards of range.

AIMING POINT.— The correct aiming point, when you fire at a bull's-eye target at 25 yards, is a 6 o'clock sight picture. At 15 yards, bring the aiming point well up into the black. When you fire at an "E" type of silhouette target, the aiming point is in the center of the target.

CORRECT SIGHT PICTURE.— A sight picture is the pattern of the pistol sights in relation to the target as you aim the pistol. A correct sight picture combines correct sight alignment and correct aiming point (fig. 3-52). When you are aiming, your eye cannot focus simultaneously on three objects (rear sight, front sight, and bull's-eye) at different ranges. Therefore, the last focus of the eye should always be on the front sight. You will see the front and rear sights sharp and clear, but the bull's-eye will appear to be a bit hazy. If sight alignment



Figure 3-53.—Standing position (pistol).

is correct, the bullet will strike the bull's-eye, even if the sight picture is partially off center but still touches the bull's-eye. Since it is physically impossible to hold the weapon perfectly still, you must learn to apply trigger squeeze and to maintain correct sight alignment while the weapon is moving around the bull's-eye. This movement of the pistol is referred to as the "wobble area." You must accept this wobble area, or movement, and endeavor to keep it to a minimum.

Position

To position yourself properly for firing the pistol, you need to know how to grip the pistol correctly and how to position your body in relation to the target. Only the standing position will be covered in this section, because it is the one used in qualification. However, the pistol can also be fired accurately from the kneeling, crouch, and prone positions. The pistol may be gripped with either a one-hand grip or a two-hand grip.

STANDING POSITION ONE-HAND GRIP.— To assume the standing position using the one-hand grip (fig. 3-53), face the target squarely and then execute an

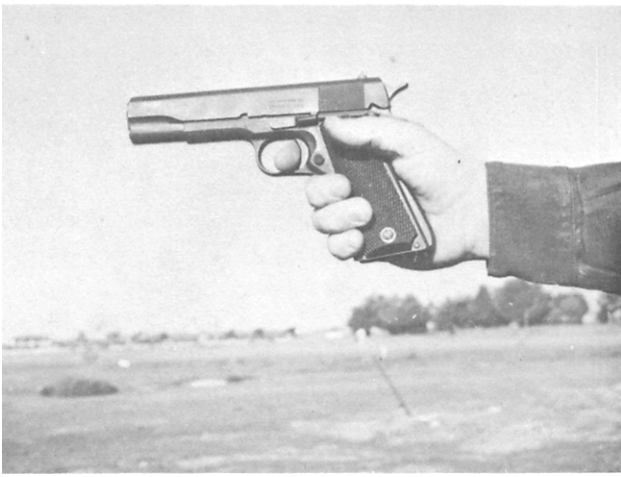


Figure 3-54.—Gripping the pistol (one hand).

exaggerated half left face (about 50 degrees). Spread your feet about shoulder width apart until you stand comfortably. Your legs should be straight, but not stiff, and your hips should be level. Extend the index finger of your shooting hand and point it at the target. Adjust your stance until your finger points naturally, without muscle tension, at the center of the target. Pick the pistol up with your other hand and place it in your shooting hand. The mainspring housing should rest firmly in your palm with the grip safety pressed into the Y, formed between the thumb and forefinger. Hold your hand as high as possible on the receiver without squeezing the flesh between the hammer and grip safety.

Grip the receiver firmly with the hand and fingers. Wrap the three lower fingers around the receiver, and place the trigger finger inside the trigger guard. Hold your thumb up and along the side of the pistol with enough pressure to steady the pistol and to equalize any pressure from the other side by the palm and forefinger (fig. 3-54). Once a firm grip is obtained, maintaining the same degree of firmness throughout firing is important. A change in your grip will change the location of the shot group on the target. A tight grip tends to cause the bullet to strike low and a loose grip to strike high. Keep your trigger finger away from the receiver.

With a proper grip on the pistol, the muscles of your arm should be firm, but not rigid. Your arm should be straight with your wrist and elbow locked. This will prevent excessive up-and-down movement of the weapon. When the weapon is fired, the recoil will be absorbed through the arm to the shoulder. If you are in the correct position, the pistol will return to approximately the same sight picture after each shot.

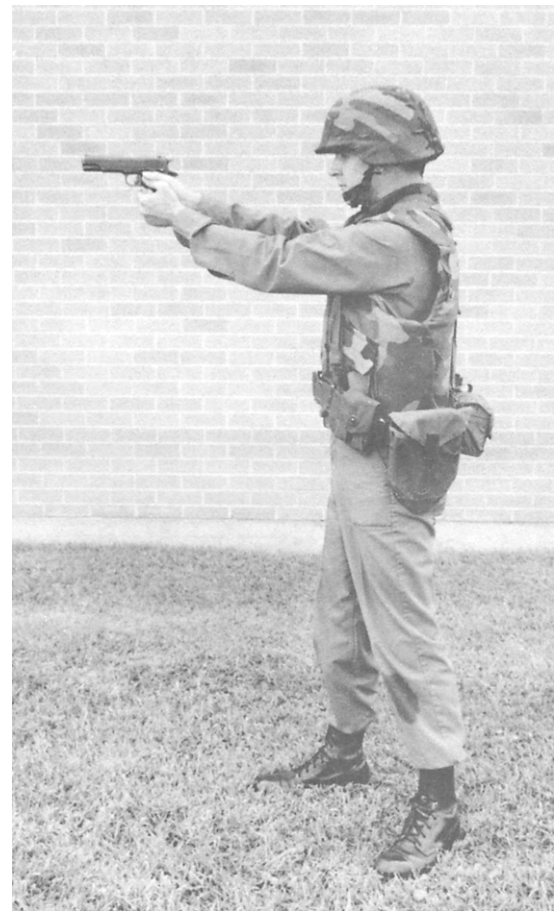


Figure 3-55.—Standing position (pistol), two-handed grip.

STANDING POSITION TWO-HANDED GRIP.— In this position (fig. 3-55), you face the target squarely with your feet placed comfortably about shoulder width apart. Keep your legs straight without stiffness and your hips level and slightly forward. Relax the muscles of your diaphragm, and make no effort to hold in your abdomen.

Grasp the pistol in the same manner as if you were firing one-handed. Next, with your free hand extended forward, palm up, place the butt of the weapon into your extended palm. Place the little finger of your shooting hand between the index and middle finger of your other hand. The thumb of your free hand is straight up alongside the pistol grip with the thumb of your shooting hand locked over the top of the other thumb. Bring the last three fingers of your other hand up and over the back of your shooting hand, locking the weapon firmly in both hands (fig. 3-56). Bring the weapon onto the center of the target by shifting your feet.

MISCELLANEOUS.— In both the one-handed and two-handed positions, you position your head so that



Figure 3-56.—Two-handed grip.

you are looking straight out through your shooting eye. Keep your shooting arm fully extended.

In the one-handed position, the shoulder of your shooting hand should be slightly raised. Turn your head in order to see the target through the sights. The ease with which your head can be turned is another determining factor in how far you must turn to the right or left. There should be no strain on the neck muscles with your head held upright. The whole position, with the exception of your shooting arm, is one which can be maintained with the least muscular effort. Your body is balanced rather than held in position. The muscles of your shooting arm and shoulder should be tightened somewhat to sustain the weight of the pistol and to maintain a correct grip. Excessive tightening of the muscles of your shooting arm and hand should be avoided. The tension in the muscles of your shooting arm and hand should be maintained after the hammer falls. This will assist in getting off your second shot quicker.

Because of the differences in the body structure of individuals, the standing position will vary slightly. But regardless, your position should be relaxed and comfortable. The pistol should point at the center of the target or you will be tense while firing. If you are tense, there will be excessive muzzle movement.

Trigger Squeeze

Poor shooting is most often caused by disturbing your aim as the bullet is leaving the barrel. This is usually the result of jerking the trigger, or flinching. The trigger does not have to be jerked violently to spoil your aim; even a slight off-center pressure of

your finger while squeezing the trigger is enough to move the strike of the bullet several inches. **FLINCHING** is a subconscious reflex caused by anticipating the recoil from firing. **JERKING** results from attempting to fire the pistol at the precise time that you align the sights with the target. Both flinching and jerking will cause the bullet to strike the lower left section of the target. An attempt to correct flinching and jerking by tightening the large muscle in the heel of the hand may cause heeling. **HEELING** causes the bullet to strike the target high and to the right. You can correct all these shooting errors by understanding and using the correct trigger squeeze. Improper trigger squeeze will cause more misses on the target than any other single step of preparatory marksmanship training.

You obtain correct trigger squeeze by applying a uniformly increasing pressure on the trigger straight to the rear without disturbing the sight alignment until the pistol fires. The trigger slack, or free play, is taken up first, and the correct squeeze continues steadily until the hammer falls. If the trigger is squeezed properly, you will not know when the hammer will fall. This is the best way to prevent jerking, flinching, and heeling.

To assist you in squeezing the trigger properly, use the acronym **BRASS** as you did with the rifle. You must also learn to call your shots. If you cannot call your shots correctly, you are not concentrating properly on sight alignment and trigger squeeze.

TECHNIQUE OF FIRE

The technique of fire is the application and control of the combined fire of a fire unit. The rest of this chapter concerns the technique of fire for rifle and machine gun units.

FIRE CHARACTERISTICS

The fire of rifles and machine guns has the following characteristics: trajectory, danger space, burst of fire, dispersion, shot patterns, and beaten zone.

The **TRAJECTORY** is the curved path of the bullet in its flight through the air. Trajectory is influenced by three forces: velocity of the projectile, gravity, and air resistance. The farther the bullet travels, the greater the curvature of its path becomes. The highest point on the trajectory (called the maximum ordinate) is a point at

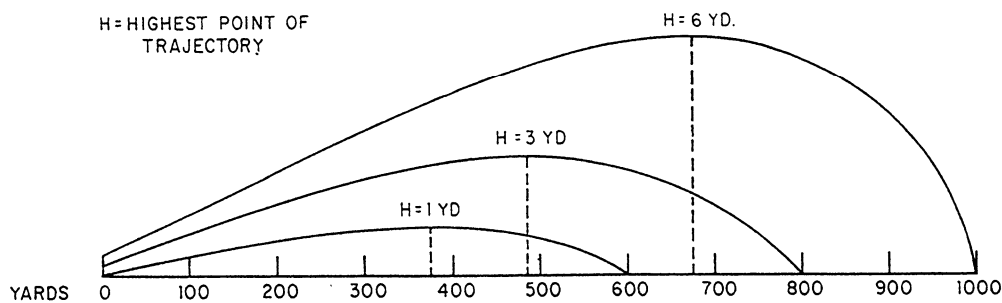


Figure 3-57.—Projector of 7.62-mm ammunition showing maximum ordinate (H) of trajectory.

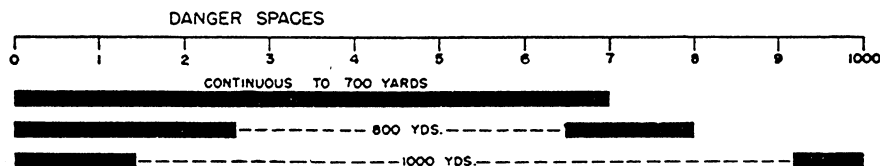


Figure 3-58.—Danger space at 1,000-yard range.

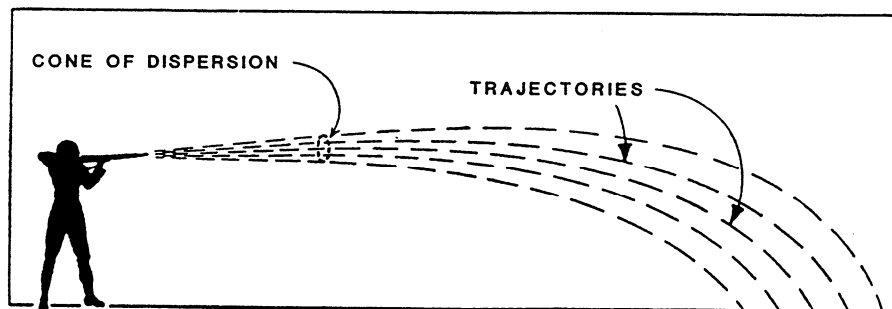


Figure 3-59.—Cone of dispersion, or cone of fire.

approximately two-thirds of the range from the weapon to the target (fig. 3-57).

DANGER SPACE is the area between the weapon and the point of impact in which the bullet does not rise above the average height of a man (presumed to be 68 inches). At ranges up to 750 yards, a rifle bullet fired over level or uniformly sloping ground does not rise above this height; therefore, for such ranges, the danger space is continuous. At ranges greater than 750 yards, a portion of the trajectory is above this height; therefore, the danger space is not continuous but exists for a variable distance in front of the muzzle and in front of the point of impact. In the latter case, the danger space begins again when the bullet comes within 68 inches of the ground. The length of the two danger space zones is dependent upon the range, as shown in figure 3-58.

A number of shots fired automatically with a single pressure on the trigger is called a **BURST OF FIRE**. For normal ground targets, the number of rounds in a burst is usually from four to ten.

When several bullets are fired from a rifle or machine gun held in a fixed position, there is a slight variation in the trajectories. The causes of these differences are in the powder charge, the weight of the bullet, atmospheric and wind conditions, and vibration of the weapon. These variations are known as **DISPERSION**. The several dispersions, plotted in profile, form a cone with its apex to the muzzle of the weapon; this is known as the cone of dispersion, or the cone of fire (fig. 3-59).

The impact pattern of the cone of dispersion on a vertical target (which would be oval in shape) is called the **VERTICAL SHOT PATTERN**. (See fig. 3-60.) The

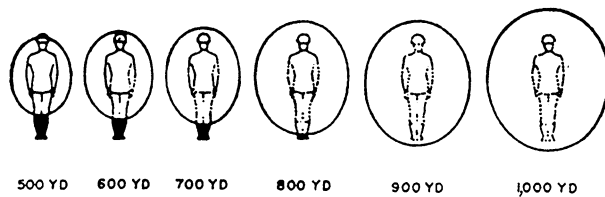


Figure 3-60.—Vertical shot pattern at various ranges.

RANGE IN YARDS	TABLE OF APPROXIMATE EFFECTIVE BEATEN ZONES ON LEVEL GROUND
500	150 YDS. LONG - 1 YD. WIDE
1000	90 YDS. LONG - 2 YDS. WIDE
1500	65 YDS. LONG - 3 YDS. WIDE
2000	55 YDS. LONG - 4 YDS. WIDE

Figure 3-61.—Horizontal shot patterns at various ranges.

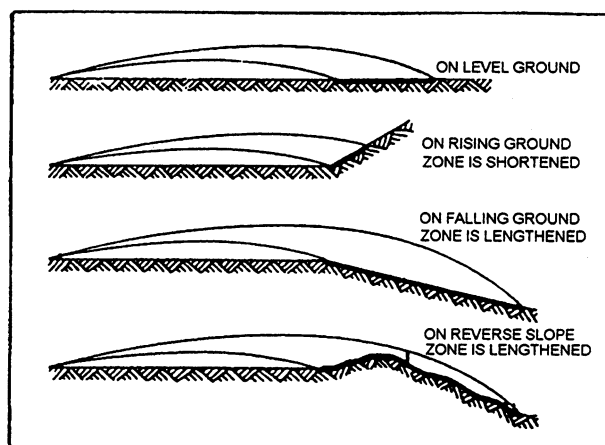


Figure 3-62.—Effect of ground slopes on beaten zone.

impact pattern on a horizontal target, which would be a long, narrow ellipse, is known as the **HORIZONTAL SHOT PATTERN** or **BEATEN ZONE**. (See fig. 3-61.)

The **BEATEN ZONE** is the area of the ground the bullets strike. The size and shape of the beaten zone depend upon the range and slope of the ground, as shown in figure 3-62.

CLASSES OF FIRE

Fire is classified with respect to the target, the ground, and the gun. (See figs. 3-63 through 3-65.)

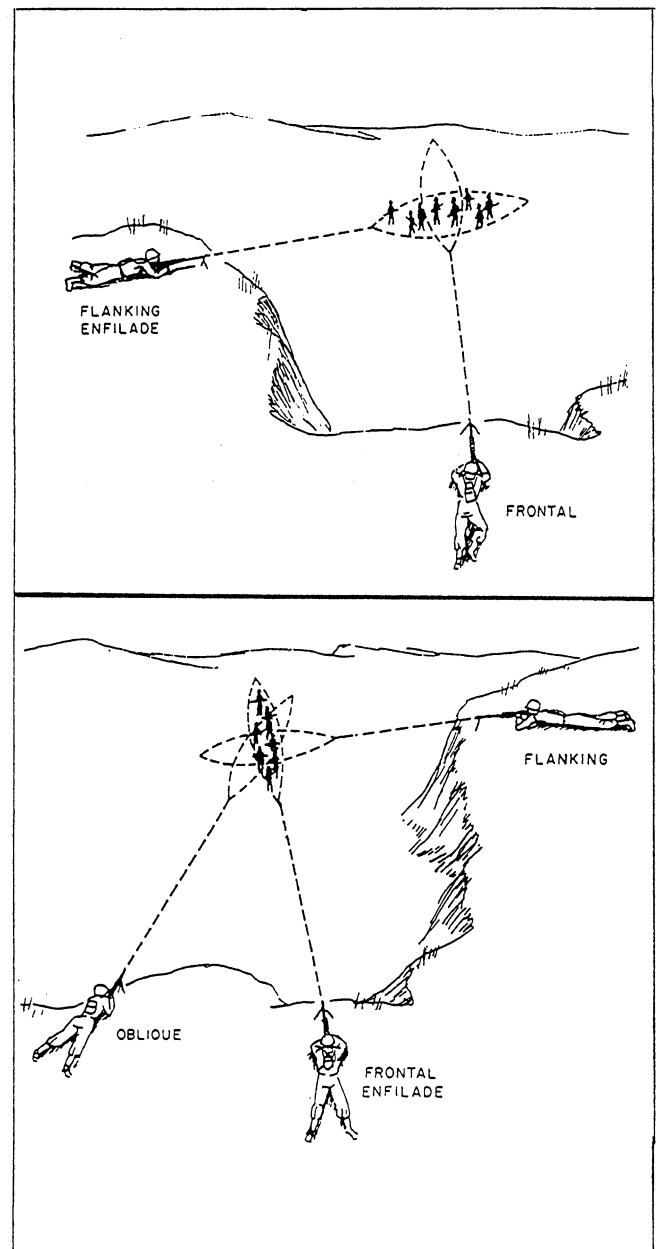


Figure 3-63.—Fire in respect to the target.

Fire with respect to the target may be **FRONTAL** (delivered perpendicular to the enemy front), **FLANKING** (delivered perpendicular to the enemy flank), or **ENFILADE** (delivered so the long axis of the beaten zone corresponds with the long axis of the target). **ENFILADE** fire may be either frontal or flanking, depending on the direction of the long axis of the target. Since it makes maximum use of the beaten zone in relation to the shape of the target, enfilade fire is the most effective. Fire delivered from a direction that is neither frontal nor flanking is called **OBLIQUE** fire.

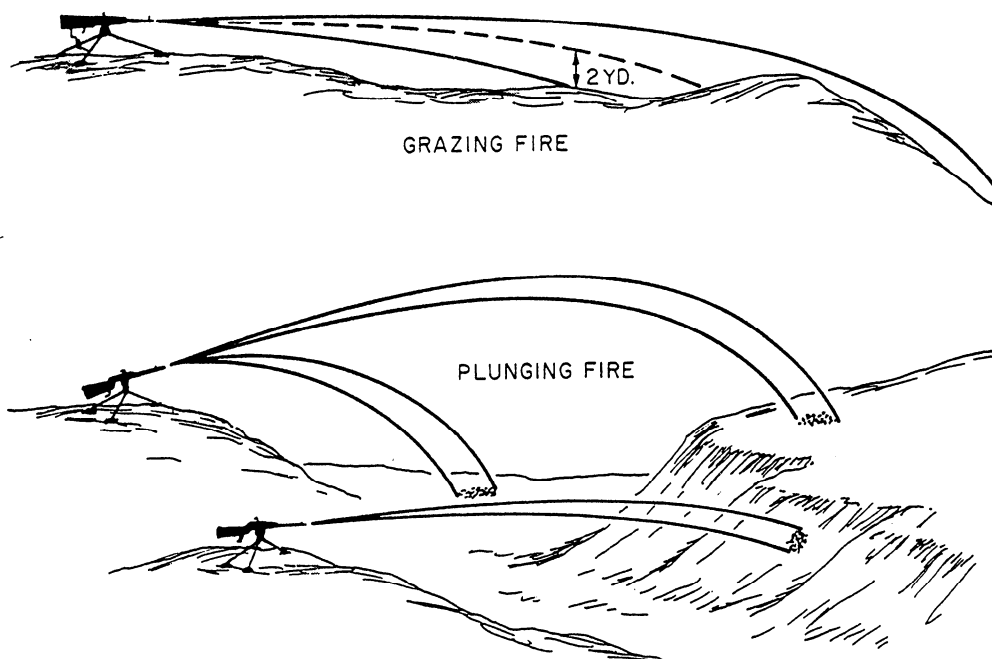


Figure 3-64.—Fire in respect to the ground.

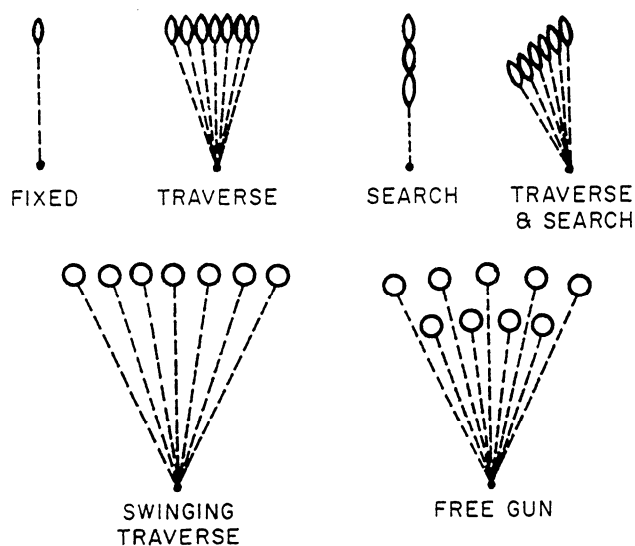


Figure 3-65.—Fire in respect to the gun.

Fire with respect to the ground can be classified as grazing, plunging, or overhead.

- **GRAZING** fire has a trajectory not higher than 68 inches above the ground. Grazing fire can exist for 750 yards over level or uniformly sloping ground.

- **PLUNGING** fire strikes the ground from above at a considerable angle. The danger space of plunging fire is practically limited to the beaten zone.

- **OVERHEAD** fire is delivered over the heads of friendly troops. It must usually be high trajectory, plunging fire.

Fire with respect to the machine gun may be fixed fire, searching fire, traversing fire, or combined traversing and searching fire, swinging traverse fire, and free gunfire.

- **FIXED FIRE** is delivered against targets that only require a single aiming point. The depth of the beaten zone must be large enough to include the target. Fixed fire is continuous as long as any portion of the target remains in the zone of fire.

- **SEARCHING FIRE** is distributed in depth by successive changes in the elevation of the gun. Searching fire is used against targets too deep to be included in the beaten zone of fixed fire. A burst of free is delivered after each change in elevation.

- **TRAVERSING FIRE** is distributed in width by successive changes in the horizontal direction of the gun. A burst of fire is delivered after each change or during the swing.

- **COMBINED TRAVERSING AND SEARCHING FIRE** is distributed both in width and depth and by changes in both elevation and horizontal direction.

- **SWINGING TRAVERSE FIRE** is delivered against targets too wide to cover with the traversing

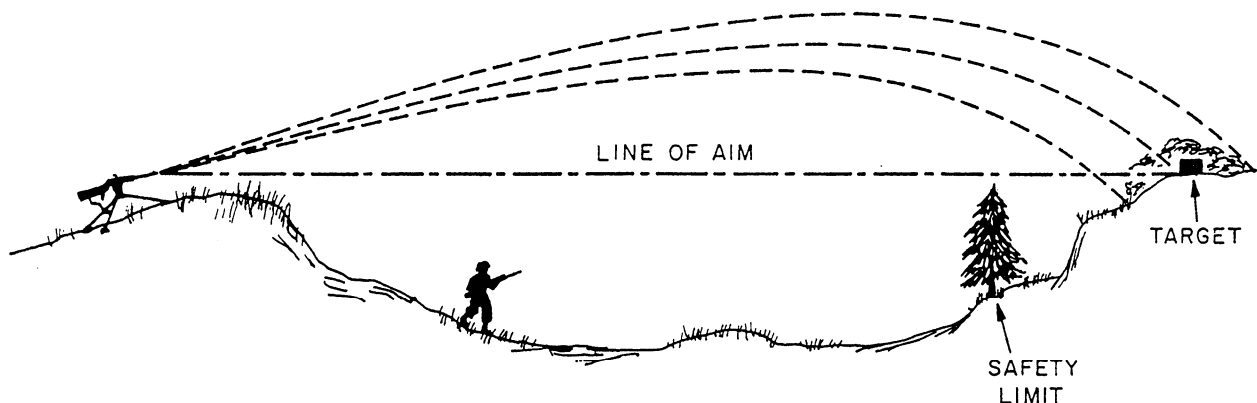


Figure 3-66.—Delivering of overhead fire.

handwheel. Also, it is used against targets that are moving so rapidly across the front of the gunner that he or she cannot maintain effective fire while using the traversing handwheel.

- **FREE GUNFIRE** is delivered from the tripod mount against a target requiring rapid, major changes in direction and elevation that cannot be made with the traversing and elevating mechanism. Free gunfire can also be used from a vehicular mount against a target that cannot be adequately covered by selecting a series of aiming points.

All types of fire can be delivered with biped-, tripod-, or vehicular-mounted guns except as follows: swinging traverse fire cannot be delivered with bipod- or vehicular-mounted guns; free gunfire cannot be delivered with bipod-mounted guns.

OVERHEAD FIRE

Overhead fire with the rifle is safe when the ground affords protection to friendly troops or when the troops are far enough below the line of fire (fig. 3-66). Whether or not overhead fire should be used in any particular case is a matter of judgment.

A machine gun on a tripod is capable of delivering accurate overhead fire because of the small, uniform dispersion of the cone of fire. In the attack, the use of overhead fire permits the machine gun to support the advance of the rifle units. To permit overhead fire on any target, pass the cone of fire over the heads of friendly troops by a certain distance, called the **MINIMUM CLEARANCE**. Two rules are prescribed by which the minimum clearance may be determined: the **GUNNER'S RULE** for ranges up to 900 yards and the **LEADER'S RULE** for ranges greater than 900 yards.

Overhead fire will not be delivered by use of these rules at ranges less than 400 yards or greater than 1,800 yards.

The steps in using the **GUNNER'S RULE** are as follows:

1. Lay the gun on the target with the correct sight setting to hit the target.
2. Without disturbing the lay of the gun, set the rear sight at 1,500 yards.
3. Look through the sights and note the point where this new line of aim strikes the ground. If this point is beyond the feet of friendly troops, you may deliver overhead fire safely until the troops reach this point. It is not safe to fire when they pass this point.

The steps in the application of the **LEADER'S RULE** are as follows:

1. Select a point on the ground to which you believe friendly troops can advance with safety.
2. Determine the range to this point by the most accurate means available.
3. Lay the gun on the target with the correct sight setting to hit the target.
4. Set the rear sight at 1,500 yards or at the estimated range to the point plus 600 yards, whichever is greater, without disturbing the lay of the gun. Under no condition should the sight setting be less than 1,500 yards.
5. Note the point where the new line of aim strikes the ground. If it strikes at the selected point, that point marks the limit of safety.
6. If the new line of aim strikes the ground short of the selected point, troops can advance safely to the point where the line of aim strikes the ground and to an

unknown point beyond. If you desire to fire after friendly troops advance farther than the point where the line of aim strikes the ground, you must determine this farther point by testing new points until the line of aim and the selected point coincide.

RANGE ESTIMATION

In combat, you seldom know ranges in advance. To bring effective fire to bear on the enemy, train the riflemen and machine gunners to estimate ranges quickly and accurately. Ranges are estimated either by eye or by observation of fire.

ESTIMATION BY EYE is the usual method of estimating range in combat. You accomplish this by mentally applying a unit of measure to the distance to the target. This unit is normally 100 yards. You need to be familiar with the appearance of this unit of measure at various distances and over varying types of terrain to be able to use this method effectively when estimating ranges by eye.

Eye estimation is difficult to apply for ranges of more than 500 yards. When the range exceeds 500 yards, estimate a point halfway to the target; then, double the estimate.

When much of the ground between the observer and the target is hidden, eye estimation is difficult. In some cases, you may overcome this difficulty by the use of a **MENTAL ARC**. Move your gaze in a mental arc to the right or left of the target. Find a prominent object at about the same range as the target, and use it to estimate this range.

When none of the previously described methods are feasible, you may possibly estimate the range by the appearance of objects. Conditions of light, atmosphere, color, and terrain affect the apparent distance of objects.

Accurate estimation of ranges by eye requires considerable practice over all types of terrain and under all conditions of visibility. The use of known distance ranges, marked off in 100-yard intervals, is recommended for initial training.

Range estimation of **OBSERVATION OF FIRE** is determined by observing the flight of tracer bullets or by observing the points where projectiles strike.

Tracer bullets leave a red trail for about 950 yards of their flight. The shooter first estimates the range by eye to determine the initial sight setting. Thereafter, by watching the strike of the tracer bullets, he or she corrects the sight setting to hit the target.

When you are in suitable terrain, watch a projectile strike the ground. If it kicks up dust or other visible material, follow the same procedure as you would with tracers.

FIRE DISCIPLINE

Fire discipline is the state of order, coolness, efficiency, and the obedience existing among troops in a fire fight. It implies the careful observance of instructions in the use of weapons in combat and the execution of the exact orders of the leader. To have effective fire discipline, control it by having leaders. The responsibility for fire discipline in the platoon rests with the platoon commander, assisted by his or her subordinates. The squad leader maintains discipline in the squad. There is a tendency for untrained machine gunners and riflemen to open fire at night when hearing noises and on seeing imaginary targets. This is dangerous and wastes ammunition; but more important, it gives the position away. Also, the enemy could stand off and send a couple of scouts into fire several shots or to throw some grenades at the defensive positions to draw responsive fire. If the fire discipline is poor, the defenders return the fire. The enemy can then plot the locations of the defense positions, plan an attack to avoid strong points, or direct supporting fire accurately on the defenders. The squad leader is responsible for controlling these tendencies in his or her squad.

FIRE CONTROL

Fire control includes all operations connected with the preparation and actual application of fire to a target. Fire control implies the following abilities of the leader:

- To have his or her unit open fire the instant he or she desires
- To adjust the fire of his or her weapons on the target
- To shift fire from one target to another
- To regulate the rate of fire
- To cease firing at will

Lack of proper fire control causes the loss of the surprise effect, premature disclosure of the position, misapplication of fire on unimportant targets, and waste of ammunition. **DISCIPLINE** and **CORRECT TECHNICAL TRAINING** are fundamental in ensuring fire control.

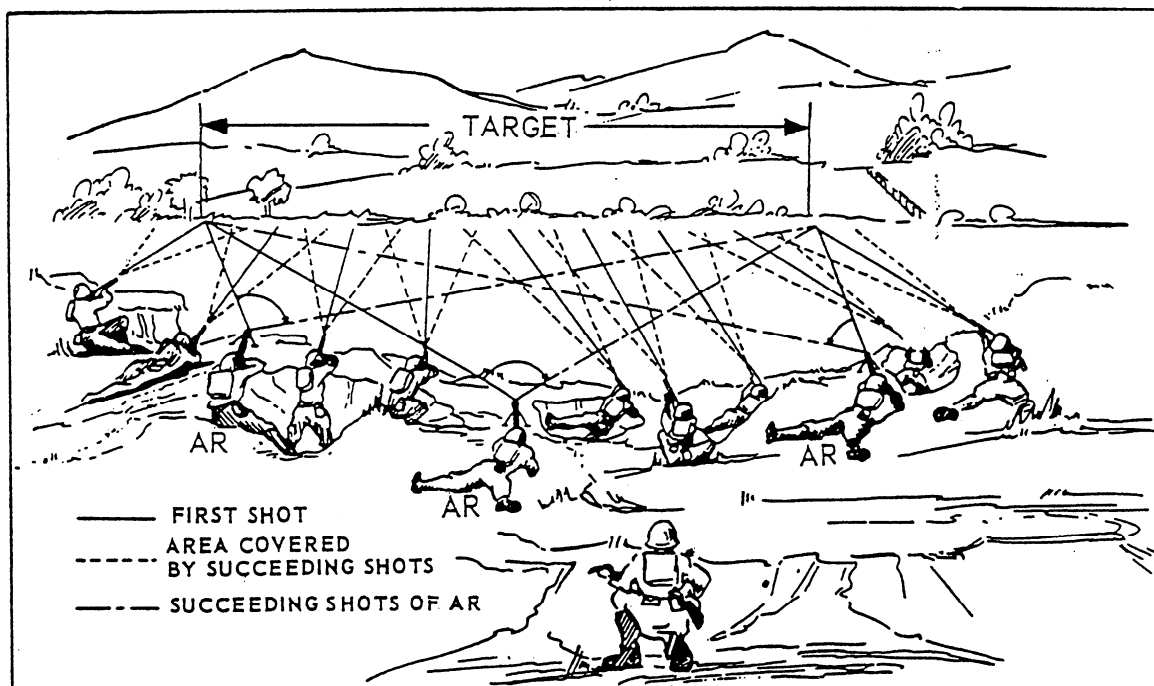


Figure 3-67—Fire distribution by individuals of the rifle squad.

The platoon commander's order to his or her section or squad leaders assigns a mission to each section or squad; gives the firing position area each squad will occupy and the targets it will engage; or the sector of fire it will cover. In addition, he or she frequently prescribes the technique to use in engaging targets.

The section or squad leader's order prescribes the location for each weapon, the targets, and the technique to be used. In the absence of orders from the next higher commander, the platoon, section, or squad leaders regulate opening fire and lifting, shifting, and rate of fire.

FIRE DISTRIBUTION

The distribution of fire, to be effective, must be over the entire target. Improper distribution results in gaps between zones and allows apart of the enemy to escape, to advance, or to use their weapons without effective opposition.

Rifle Fire

The fire of a rifle unit is either concentrated or distributed. The nature of the target, as given in the fire order, will determine in each mind of the rifleman the type of fire to use.

- **CONCENTRATED FIRE** is directed at a single point. Enemy machine guns, bunkers, and heavy weapons are examples of suitable targets for concentrated fire.

- **DISTRIBUTED FIRE** is fire distributed in width for the purpose of keeping all parts of a larger-than-point target under effective fire. Each rifleman fires his or her first shot at that portion of the target corresponding generally to his or her position in the squad. He or she then distributes his or her succeeding shots over that part of the target extending a few yards right and left of the point of aim for his or her first shot. The width of target he or she will cover will be the maximum on which he or she can deliver accurate fire without changing his or her position, as shown in figure 3-67.

In **PLATOON FIRING**, unless otherwise ordered, each squad completely covers the target designated for the platoon. This enables the leader to shift part of his or her fire to a new target or to remove a squad from the line without leaving a portion of the target not under fire. If the platoon leader does not desire each squad to cover the entire platoon target, he or she assigns definite sectors of fire to each squad.

In **DETERMINING EXTENT OF TARGET**, it is difficult or impossible to pick out visually each individual enemy in either a dug-in or camouflaged position. A muzzle blast may show the location of a few

individual positions, but many positions will be too well camouflaged to see. However, engaging the whole target is imperative in order to inflict decisive casualties and neutralize the fire of the enemy. Pinning down only the obvious positions and allowing the remaining enemy to fire unmolested does little good.

Under these circumstances, to apply the proper fire distribution effectively, the unit leader must first determine the locations of the flanks of the enemy. The flanks may be obvious and easy to see. They may be limited by natural features, such as woods, a cliff, or a gully; or they may be approximately located from the direction and sound of the firing of the enemy.

After determining the flanks of the enemy, the squad leader must designate the portion of the target, whether in part or in its entirety, that he or she wishes his or her squad to engage. This can best be done by using tracers fired on either flank. The squad then opens fire using the normal fire distribution.

Machine Gun Fire

In fire control terminology, target width is designated in mils. A MIL is a unit of angular measurement; there are 1,600 mils in 90 degrees. Gun angles of train and elevation are measured in roils. A target width of 50 mils has no relationship to the actual width of the target. This expression simply means that moving the gun through a train (horizontal angle) of 50 mils will cover the entire target front. Thus, a wide target could have a target width of 50 mils at long range, while a narrow target would have the same width at much shorter range.

No fixed rule about the maximum width of a target that a single gun may profitably engage can be given. But preferably targets for light machine guns should be less than 50 mils in width. The section (two guns) is the machine gun fire unit. Whenever practical, both guns cover the same target area, although an occasion may arise to use single guns profitably. Assigning both guns to a single target area ensures continuous fire should either gun be put out of action, provides a greater volume of fire on the target, and reduces the time required to cover the target.

Targets having a width or depth no greater than the beaten zone of the weapon engaging them are considered POINT targets. You should engage point

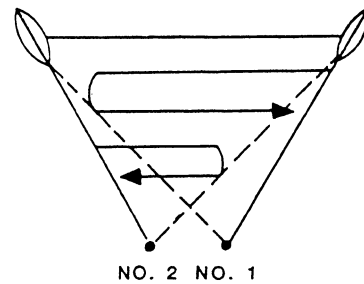


Figure 3-68.—Traversing method by section. Both flanks are visible to the gunners. Target is less than 50 mils in width.

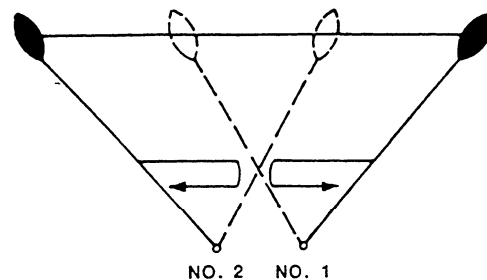


Figure 3-69.—Traversing method by section. Targets 50 Mil or more in width. (Each gun assigned a portion of the target.)

targets with fixed fire. The command for such fire is **FIXED**. Gun crews are trained to follow any movement or change in formation made by the enemy after the initial burst of fire.

When sections engage frontal targets that are less than 50 mils wide and less than the length of the beaten zone in depth, the leader uses the normal traversing method. Each gun lays just outside its corresponding target flank and traverses across the target front to a point just outside the opposite target flank (fig. 3-68). The command for this type of fire is **TRAVERSE**.

When the target measures 50 mils or more in width and is less than the length of the beaten zone in depth, the leader assigns a portion of the target to one gun and the remainder to the other. Each gun lays on the outside flank of its assigned portion and traverses back and forth across the portion assigned. (See fig. 3-69.) The command would be, for example: No. 1 gun, **RIGHT HALF**; No. 2 gun, **LEFT HALF**; **TRAVERSE**.

If the flanks of the target cannot be seen, the leader should order each gun to traverse so many roils from a point between the flanks. The designated number of roils should be large enough

for each gun to traverse to a point beyond the suspected position of the flank.

Searching fire covers targets deeper than the length of the beaten zone. If the target is stationary, has limited mobility, or is moving slowly toward you, and if the ends are visible, No. 1 gun lays on the near end and searches down. If the estimated depth of the target is 200 yards or less, the leader announces the range for both guns to the middle of the target. If the estimated depth of the target is more than 200 yards, he or she announces the range to the near end for No. 1 gun and the range to the far end for No. 2. The command for this type of fire is SEARCH.

If the target is moving rapidly toward the guns, both guns lay on the near end with the range to that point and search up. If the target is moving rapidly away from the guns, both guns lay on the far end and search down. The distribution element of the command for covering a rapidly approaching or receding target is ALL GUNS, NEAR (FAR) END, SEARCH.

FIRE COMMANDS

The leader of a fire unit, after making the decision to fire on a target, must give instructions about how to engage the target. He or she gives these instructions in the form of a fire command. A fire command for machine guns contains four basic elements: the ALERT, the TARGET, the DESIGNATION, the METHOD OF FIRE, and the command to OPEN FIRE. Examples of the four elements are given below.

1. The alert designates the gun crew that is to fire and alerts them to receive the command. The alert includes the following:

Gun crew to fire—FIRST SECTION

Target alert—FIRE MISSION, with STATION-ARY TARGET,

MOVING TARGET, or other additional necessary information

2. The leader gives the target designation as follows:

Direction—FRONT

Target description—COLUMN OF TROOPS

Range—FIVE FIVE ZERO (yd)

3. He or she designates the method of engaging by naming the method, such as TRAVERSE. The rate of fire is a part of the method of fire. The leader states the amount of fire to place on the target, such as 75 ROUNDS PER MINUTE or MEDIUM RATE.

4. The command to open fire is COMMENCE FIRING or FIRE. When a large volume of sudden surprise fire is desired, the leader may preface the command with the preparatory command, On My Command. The unit leader then waits until all gunners have located the target and aimed before giving the command of execution.

Fire control will also include any necessary adjustment corrections for machine guns, as RIGHT TWO ZERO MILS, ADD THREE MILS.

A fire command for riflemen and automatic riflemen contains six basic elements: the alert, the direction, the target description, the range, the target assignment, and the fire control.

The ALERT brings the unit to a state of readiness to receive further information. If all men or women in the unit are not to fire, the command also designates those who are to fire. If all men or women are to fire, the command for the alert is SQUAD. If only certain men or women are to fire, the names of the men or women are stated after the word SQUAD.

The DIRECTION element tells the riflemen the target direction. It may be given orally, such as RIGHT FRONT or by pointing or firing in the direction of the target. If the target is not readily visible, a reference point may be used. A reference point is some prominent terrain feature, either natural or artificial, to use to make the target easier to locate. The reference point should be well defined and easily recognized. If possible, the point should be on a line with, and beyond, the target because, in this position, it is a more accurate reference for a number of men or women firing from separate positions.

For the sake of brevity, the leader designates the reference point by the single word REFERENCE, followed by a description of the point, such as FARM HOUSE ON HORIZON. He or she should give the distance right or left. He or she may give this distance in FINGER MEASUREMENTS in which the method to use is as follows:

1. Extend your arm full length with the palm up. Point the appropriate number of fingers, beginning

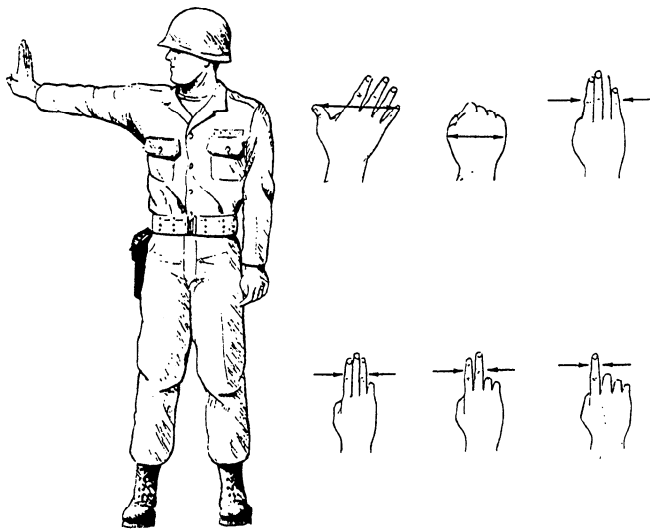


Figure 3-70.—Measurement of angles by hand and fingers.

with the index finger, vertically to the reference point. (See fig. 3-70.)

2. Close one eye, sight along the outside of the index finger so one edge is on the reference point. Use the other edge of the appropriate number of fingers (one, two, three, or four) to locate the hidden target. When this method is used, the command will sound like-

FROM REFERENCE POINT

MOVE LEFT THREE FINGERS

FIRE WHEN READY

TARGET DESCRIPTION should be brief and accurate. A target maybe **POINT**, such as a machine gun, **LINEAR**, such as a line of skirmishers, or **AREA**, such as men or women dispersed through a clump of woods.

RANGE may be announced orally or indicated by arm-and-hand signals.

TARGET ASSIGNMENT designates who is to fire at the target. If the whole unit has been alerted and if the leader desires that they all fire, then target assignments may be eliminated.

The **FIRE CONTROL** element normally consists of the command, **COMMENCE FIRING** or **FIRE**, plus any designation the leader desires about rate of fire, such as **QUICK FIRE**, **FIRE FASTER**, **FIRE SLOWER**.

The following is an example of a simple fire command:

SQUAD

RIGHT FRONT

SNIPER ON ROOF OF FARMHOUSE

TWO HUNDRED

JONES AND SMITH

COMMENCE FIRING

An example of a fire command using a reference point and finger measurements is the following:

LEFT FRONT

Reference: **WHITE CHURCH SPIRE**

ON HORIZON, RIGHT THREE FINGERS

Target: **MACHINE GUN IN BUSHES**

THREE HUNDRED

TEAMS ONE AND TWO

COMMENCE FIRING

APPLICATION OF FIRE

Application of fire consists of placing the fire of a unit on the desired target at the proper time and the control of the fire after that. Accurately controlled fire on the enemy has both a physical (casualty producing) and a morale effect.

FINAL PROTECTIVE LINES

A final protective line is a predetermined line where interlocking bands of grazing fire are placed in order to stop enemy assaults. The elevation and direction of the fire are fixed and capable of being delivered under any condition of visibility.

Because of irregularities in the terrain, fixed machine gun fire cannot always produce the maximum effective grazing fire. Then the leader uses rifle fire to ensure that all the final protective lines are covered.

Fire on the final protective line during periods of good visibility is aimed and adjusted fire. Under such conditions, the section leader will generally determine the rate of fire and may also give the order to cease firing.

Under conditions of poor visibility, the battalion order may prescribe the rates of fire. In the absence of instructions, the usual rate of fire for a section on a final protective line is the rapid rate for the first 2 minutes, then the medium rate until ordered to cease firing.